

Andrew Beattie - Submission Part 3 A North Nowra Link Rd Application 07_0037

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Date: 30/03/2011 3:51 PM
Subject: Submission Part 3 A North Nowra Link Rd Application 07_0037
Attachments: Advisory Com PL North Nowra Link Rd submission.doc; Ad Com letter re Link Rd submission.jpeg

The Director General
NSW Department of Planning
GPO Box 39
Sydney
NSW 2001

ATTENTION: Mr Andrew Beattie, Planner,

Please find attached a letter signed by Mr Rob Pallin, Deputy Chair together with a submission from the National Parks and Wildlife South Coast Region Advisory Committee regarding the public exhibition of the Part 3 A concept application for a North Nowra Link Road, Application 07_0037.

I arranged with Ms Dinuka Mc Kenzie for an extension of time until COB 1st of April to lodge this submission.

Please contact me to confirm receipt of the Advisory Committee letter and submission and if there are any follow-up enquiries.

Yours faithfully,

Frances Bray.

Advisory Committee member.

Phone 444 72185

The Director General
NSW Department of Planning
GPO Box 39
Sydney
NSW 2001



South Coast Region
Advisory Committee

Attention: Mr Andrew Beattie,

Dear Sir,

Proposed North Nowra Link Rd North Nowra. Concept Plan Application 07_0037

I refer to the public exhibition of the application by Shoalhaven City Council under Part 3 A of the Environment, Planning and Assessment Act, for the approval of a North Nowra Link Rd.

Please find attached a submission on behalf of the South Coast Region National Parks and Wildlife Advisory Committee.

The Advisory Committee would have a role under the National Parks and Wildlife Act in providing advice to the Minister for the Environment in any consideration of a future proposal for revocation of part of the Bomaderry Creek Regional Park, should that arise from approval of one of the proposed options for a North Nowra Link Rd.

The Advisory Committee considers that the Northern Route is consistent with the Public Interest and should be the preferred route. The Northern Route would have less impact on the integrity and high conservation values of the Bomaderry Creek Regional Park and the Bushland than the other routes. These values include exceptional high biodiversity for such a small area, threatened species recognised in State and Commonwealth legislation, Aboriginal Cultural Heritage and recreational, educational and nature tourism values.

The Northern route would also relieve traffic congestion by attracting a significant volume away from Illaroo Rd North Nowra, would have less impact on existing residents and contribute to better planning of future urban development in the surrounding area. It is considered also that the Northern route would be more cost-effective.

I understand that Ms Frances, Advisory Committee member contacted Ms Dinuka Mc Kenzie of the Department of Planning and arranged an extension of time to close of business on 1st April 2011 for the Advisory Committee's submission. Ms Bray is the contact person for this submission, and I would appreciate it if you could direct any enquiries and confirm its receipt to her at francesbray@bigpond.com or 444 72185.

Yours faithfully,

Proposed North Nowra Link Rd North Nowra. Concept Plan Application 07_0037

**Submission on behalf of the National Parks and Wildlife South Coast
Region Advisory Committee. March 2011.**

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1. Executive Summary.

In accordance with the National Parks and Wildlife Act, 1974 and the Department of Environment, Climate Change and Water Revocation of Land Policy, the National Parks and Wildlife South Coast Region Advisory Committee would have a role in providing advice to the Director General and National Parks and Wildlife Advisory Council in any consideration of a future proposal for revocation of part of the Bomaderry Creek Regional Park, should that arise from approval of one of the proposed options for a North Nowra Link Rd.

The Bomaderry Creek Regional Park was declared in 2002 and since that time there has been an expectation on the part of the community that this special status under the Act would conserve the high conservation and recreational values of the Park. These values include exceptional high biodiversity for such a small area, threatened species recognised in State and Commonwealth legislation, Aboriginal cultural heritage and recreational, educational and nature tourism values.

It is therefore concerning that the values and very integrity of the Park and the Bushland are now threatened by several of the proposals for a North Nowra Link Rd.

The Advisory Committee has fully considered the Nowra Link Road route options encompassed in the Concept Plan. Given the role of the Committee it is natural that this submission is primarily focused on members' concerns regarding the impacts on natural, cultural and recreational impacts of the proposed routes, especially the Central and Southern routes.

The conclusion that seems inescapable to the Committee is that the Northern route should be supported as the viable alternative to the potentially degrading impacts of the other routes. It is likely to be much more ecologically sustainable than the other proposed routes. The Northern Route would have limited impacts on the integrity and high conservation and recreational values of the Bomaderry Creek Regional Park and the Bushland by comparison with substantial impacts from the Central and Southern routes.

Furthermore, whilst predictably we are most interested in protecting the biodiversity of the region, in considering the proposal as a whole and taking full account of the objectives of the Link Road proposal, we think the facts speak for the broader public interest benefits of the Northern (West Cambewarra) route over the proposed Central (Pitt St- Narang Rd.) and Southern (Illaroo Rd.- West Bunberra St.) options.

Beyond these important environmental and recreational concerns, however, we have also considered strategic issues and concerns relating to consistency with the South Coast Regional Strategy and the Nowra Bomaderry Structure Plan. These issues include the implications for existing residents, traffic congestion, future urban development and projected population growth for areas adjacent to Bomaderry Creek Regional Park and Bushland and to the Northern route and the comparative cost effectiveness of the three proposed options.

This submission examines the Environmental Assessment Report (EA) in some detail. It is considered that the EA does not meet the Director General's Requirements (DGRs) regarding issues central to the choice of the final Link Rd route and approval of the application.

Firstly, the applicant, Shoalhaven City Council has not consulted the community, including the Aboriginal community regarding these specific proposals in accordance with the Part 3 A guidelines and Director-General's requirements. (DGRs)

Secondly, in the opinion of the Advisory Committee the EA does not meet the DGR's requirements with regard to addressing the objectives of the Bomaderry Creek Regional Park and assessment of the potential impacts of the proposed Central and Southern routes on Park and Bushland integrity, "particularly as a result of fragmentation and edge effects." Neither is there appropriate evaluation of the impacts on biodiversity and Aboriginal cultural heritage, on water quality of Bomaderry Creek and the area's recreational, educational and tourism values.

In particular, the Central and Southern routes would both involve construction and operation of an 80-60 km per hour road and bridge, that would fragment the significant landscape and habitat corridor values of the Park and Bushland, through destruction of native vegetation and substantial expansion of edge effects already experienced due to the proximity of urban development. The result would be cumulative impacts leading to isolation and potential local extinction of threatened species, especially given the added pressures of global warming and climate change.

The claim that the Central route "is not expected to create a more significant barrier to flora and fauna than what currently exists." (pp 69-70) is not substantiated. There is no comparison between the barrier to fauna movement from a 30-metre wide two-lane 80-60 km road and the existing narrow gravel track.

Claims that the Central and Southern routes would enhance recreational and tourism experiences are not substantiated either. The impacts for recreational and visitor activities would be significant especially from the Central route. This Central route and bridge would go over the main access to and interpretation and picnic area for the Park. Walks to the Gorge and Burnie's lookout commence from here. Proposed mitigation measures could not compensate for the loss of the quiet ambience of this area and of the Aboriginal cultural heritage displayed in the Reconciliation wall.

The Advisory Committee disputes the assessment of impacts for Threatened Species, especially for Central and Southern routes. The findings are unsound because the required surveys for several Threatened Species have not been conducted, surveys by other experts have been misinterpreted and the conclusions are not in several critical instances, consistent with the facts.

Furthermore the EA is not consistent with the "Threatened Species assessment guidelines, The Assessment of Significance," Department of Environment and Climate Change, 2007. These guidelines emphasise the need for assessment of local impacts, rather than regional impacts on threatened species. Yet this EA is based on regional rather than local impacts, thus under-estimating the longterm loss of biodiversity from the accumulated losses and depletions of populations at a local level.

The claim that the proposed offset of up to 50 hectares of Council land within the Bushland for dedication and inclusion in the Bomaderry Creek Regional Park "will increase potential habitat for fauna species within the Regional Park," does not represent a biodiversity gain.

The offer would constitute an overall loss of landscape, biodiversity and heritage values, which cannot be compensated by an exchange of ownership for part of the Bushland from one public authority to another. Much of the land Council is offering is Threatened species habitat, which Council should already be conserving for its conservation values.

The Advisory Committee agrees with the EA assessment that, "In terms of impacts upon threatened species, the Northern option provides the best biodiversity outcomes" but disagrees with the conclusion that the "environmental impacts associated with all three routes are considered to be low provided that the specified mitigation measures are implemented." Page 134

Contrary to the conclusions of the EA, the proposed mitigation measures do not address the significant impacts demonstrated in this submission. In any case these measures largely rely on an offset proposal that does not provide additional biodiversity outcomes.

The precautionary principle should be invoked as the basis for refusing the Central and Southern routes that is that, “where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental damage.”

In our view the Northern route would relieve traffic congestion by attracting a significant volume away from Illaroo Rd North Nowra. The Northern route would have less impact on existing residents and contribute to better planning for future urban development and population increase in the surrounding area. It is considered also that the Northern route would be more cost-effective.

The Central and Southern routes for the proposed North Nowra Link Rd, in all probability would have the greatest impact on the integrity of the Bomaderry Creek Regional Park and Bushland, and their high conservation values. These routes would not appear to assist with reducing traffic congestion on Illaroo Rd or in providing effective road transport infrastructure for future development areas.

Both the South Coast Regional Strategy and the Nowra Bomaderry Structure Plan aim to conserve the high conservation values of the Region, whilst at the same time, providing for future infrastructure and development expansion. A decision to approve the Northern Link Rd route would be consistent with the statutory requirements of the Strategy and the Plan.

2. Role of the Advisory Committee regarding any revocation of parts of the Bomaderry Creek Regional Park.

To enable one of the proposed North Nowra link Rd routes to proceed, it would be necessary for the NSW Parliament to pass an Act to allow revocation of the affected parts of the Bomaderry Creek Regional Park. This process would be entirely separate to consideration under the Environment Planning and Assessment Act and the Commonwealth Environment Protection and Biodiversity Conservation Act. The process would take into account whether the proposal is consistent with the Section 30 h of the National Parks and Wildlife Act 1974, that is the purpose for and principles of a Regional Park, and the Department of Environment, Climate Change and Water’s Revocation of Land Policy.

The Department of the Environment, Climate Change and Water (DECCW) has made clear it would not be appropriate to authorise by the granting of a lease or licence use of the land within a Regional Park for the purposes of a new road.

In accordance with the DECCW’s revocation policy, any advice to the Minister would need to include any formal advice or resolutions prepared by the National Parks Advisory Council and the relevant Regional Advisory Committee.

In the case of the Bomaderry Creek Regional Park, the South Coast Region Advisory Committee is the appropriate Advisory Committee to provide such advice.

The South Coast Region Advisory Committee has grave concerns about the impacts of the Central and Southern route proposals on the Bomaderry Creek Regional Park on the basis of information included in this application. The Committee is also concerned about the impacts of the Northern

route proposal, but to a lesser extent. The Advisory Committee will await any proposal by the DECCW for any revocation, before providing definitive advice.

It is understood that the DECCW made provision for a road easement beside West Cambewarra Rd at the time of the Park's declaration. However this current proposal follows a slightly different route, which is not covered by the existing easement.

The Bomaderry Creek Regional Park was gazetted in 2002, over 82 hectares of the 230 hectare area known as the Bomaderry Creek Bushland. The National Parks and Wildlife Group of the Department of Environment, Climate Change and Water manages the Bomaderry Regional Park as part of the NSW Reserve System. The Plan of Management for the Park has not been finalised, possibly because of uncertainty regarding the route of the proposed North Nowra link Rd and its potential impact on the Park.

3.

The proposal and its context.

This concept proposal by Shoalhaven City Council under Part 3 A of the Environment, Planning and Assessment Act, is for development of a North Nowra Link Road, with the assessment to involve consideration of three alignments;

- West Cambewarra Road Option 3, Northern route.
- Pitt St-Narang Road Option 1 Central route.
- Illaroo Road-West Bunberra St Option 2, Southern route.

The Central and South options would traverse the Bomaderry Creek Regional Park and Bushland. The Northern option would be set in a short distance from the northern boundary of the Regional Park and Bushland. The terms "Park" and "Bushland" will be used throughout this submission to avoid repetition of the full titles.

This submission also uses the terms Northern, Central and Southern options to indicate their general location in relation to the Park and Bushland.

It should be noted that these road proposals also encompass proposals for bridges and approaches across Bomaderry Creek, with the Central and Southern options requiring major bridges across the Bomaderry Creek Gorge.

The Northern option the shortest route is estimated to be 1,730 m in length. Less than half of this route would be close to the northern boundary of the Park where DECCW has already identified a road easement. This route would be separate to the existing West Cambewarra Rd. The proposed bridge over the Creek and its approaches would be outside the Park. The length of the approaches is not stated in the Environmental Impact Assessment.

The Central option road in traversing the Park is estimated to be 1,810 m in length. The proposal involves a three span bridge with elevated approaches of 75 m and 50 m through the Regional Park.

The Southern option is estimated to be 1,820 m in length. This route is in the main, through the Bushland, with part of the route through the Park. This proposal involves a three span box girder bridge across the gorge.

The Environmental Assessment (EA) does not state the length of any elevated approaches for the Southern route.

As indicated the Park is part of the NSW Reserve System, managed by the Parks and Wildlife Group of DECCW.

The Bushland includes land owned by Shoalhaven City Council and Crown land, part of which is subject to an Aboriginal Land Claim by the Nowra Local Aboriginal Land Council. There are various land use zonings for the Bushland outside the Park, none of which include environment protection zones.

The Park and Bushland are almost surrounded by urban development, with further urban expansion planned immediately adjacent to the Park to the west, north and north east.

4. Community Consultation.

Shoalhaven City Council has not conducted any community consultation regarding this specific proposal. With regard to Aboriginal consultation the assessment document refers to only one Aboriginal person being consulted. The documents claim politicians have conducted consultations through surveys regarding previous proposals. Such arrangements do not constitute formal and impartial consultation, based on presentation of all the facts and figures to the community.

The proponents should be facilitating genuine community consultation on all the options.

5. Summary of Significance and values of Bomaderry Creek Regional Park and Bomaderry Creek Bushland.

The deep Bomaderry Creek Gorge is the main feature of the Park. Bomaderry Creek is a tributary of the Shoalhaven River, and drains gently undulating land in the upper parts of the catchment in the Park. The Creek has cut through the Permian Nowra Sandstone to form a deep, meandering gorge, before it drains to the Shoalhaven River. The cliffs, huge slabs of fallen rock, rock pools, cascades and rainforest and tall eucalypt forest in the gorge, engender a sense of wilderness. The Park and bushland are significant for their biodiversity with varied habitats both on the plateau and in the gorge. Such biodiversity is remarkable for such a small area. The drier forests of the plateau feature beautiful wildflower displays in the later winter and spring.

There are several vantage points, which provide stunning views over the gorge and creek.

Park Objectives

Regional Parks are reserved under the National Parks and Wildlife Act to protect and conserve areas in a natural or modified landscape that are suitable for public recreation and enjoyment. Specifically, Regional parks are managed to:

- “provide opportunities in an outdoor setting, for recreation and enjoyment in natural or modified landscapes;
- identify, interpret, manage and conserve the park so as to maintain and enhance significant landscape values; conserve natural and cultural values;
- promote public appreciation and understanding of the Park’s natural and cultural values;
- provide for sustainable visitor use and enjoyment that is compatible with conservation of the park’s natural and cultural values; and

- provide for sustainable use (including adaptive reuse) of any buildings or structures or modified natural areas having regard to the conservation of the park's natural and cultural values."

An easement for a link road was provided for by DECCW adjacent to the northern boundary of the Park as part of the Government decision to maintain the integrity of the Park whilst at the same time allowing for the construction of the North Nowra link Rd in the future. It should be noted, however, that the proposed Northern route proposal is within the park and is not covered by this easement.

Park and Bushland values

The Park has the following important natural values:

Plant species.

- Populations of the Bomaderry zieria (*Ziera baeuerlenii*) found only in the Bomaderry Creek Regional Park and Bushland. This plant is listed as endangered under both the NSW Threatened Species Conservation Act ((TSC Act) and the Commonwealth Environment Protection and Biodiversity Conservation Act.
- Albatross Mallee, (*Eucalyptus langleyi*), the Bomaderry Creek population was listed as an Endangered Population under the Threatened Species Conservation Act in December 2010 and is listed as Vulnerable under the Commonwealth Act.
- Brittle Midge Orchid (*Genoplesium baueri*) is listed as Vulnerable under the TSC Act and is currently under consideration to be listed as "Critically Endangered."
- Hibbertia sp Nov. 'Menai' listed as Endangered under the TSC Act and known to occur within the study area.
- Other Rare or Threatened Australian plants (ROTAP) *Leptospermum sejunctum*, *Acacia subtilinervis* and *Rulingia hermanniifolia* and the regionally rare *Dampiera scottiana*.
- Small stands of rainforest in the lower gorge may qualify as Lowland Rainforest because of the presence of subtropical species and high plant diversity. (P 121 EA Report.)

Eight vegetation communities have been identified in the Park and Bushland, demonstrating exceptional biodiversity for such a small area. These include the moist forest complex in the gorge, Red Bloodwood-grey gum blue leaved stringybark forest woodland in the upper margins of the gorge, areas of kunzea shrubland, wet heathland/segeland and scrub, wet heath, sedgeland and woodland habitat. Scribbly gum-red bloodwood forest/woodland dominates the level topography of the Park with White stringy bark-she oak forest occurring in small pockets of clayey soils.

The Red Bloodwood-Grey Gum blue-leaved stringy bark is the primary habitat for rare and threatened plant species in the Park including Bomaderry Zieria, Albatross Mallee and other rare plants.

The Bomaderry Zieria also occurs in the Scribbly Gum and White stringy bark she oak forest.

The complex vegetation communities and the rocky and freshwater habitats of the Park also support an exceptional diversity of native animal species for such a small area. Twenty mammal, 123 bird, 19 reptile, 10 frog and 18 estuarine and freshwater fish species, including the Australian bass have been recorded in the area (Barratt 2006).

Threatened Animal species listed as Vulnerable under the TSC Act include:

Those species recorded in the Park.

- Glossy Black Cockatoo
- Masked Owl
- Square-tailed Kite
- Yellow-bellied Glider (found in the upper plateau areas.
- Large-footed Myotis.

Those species recorded close to the Park and likely to occur within it.

- The Grey headed Flying Fox camps in the Bushland area and would range through the Park.
- Spotted Tailed Quoll
- Eastern Pygmy Possum
- Giant Burrowing Frog. This species is listed under the Commonwealth Act.
- Powerful Owl
- Sooty Owl.
- Broad-headed snake.

The Park has been modelled through the Southern Comprehensive Regional Assessment as containing suitable habitat for several other threatened species including the Endangered broad-headed snake, Regent Honey Eater, Swift Parrot, Smoky Mouse and Little Red Flying Fox.

Aboriginal cultural heritage values.

The Park and wider Bushland are recognised as having high archaeological and Aboriginal heritage significance. (Boot and Barratt 2001.) The area is also of high contemporary significance for the local Aboriginal community, the Dharawal-Dhurga people who maintain strong cultural links with this part of their country to the present. The area is also of significance for Aboriginal people as a haven from efforts by welfare authorities to remove Aboriginal children from their families. The Reconciliation wall in the park's picnic area commemorates these unbroken ties from the past to the present.

Recreational, educational, scientific and tourism values.

For the Shoalhaven community the Park and Bushland provide a spectacular wild environment within easy access to residential areas. The Park and Bushland are also important for the area's cultural heritage, especially Aboriginal cultural heritage and for its aesthetic and spiritual, social and recreational, educational and economic values.

Both the Park and Bushland are almost surrounded by urban development, with plans for further such development. Accordingly the Park and Bushland provide important recreational opportunities for the residents of North Nowra and Bomaderry, with walking tracks, picnic facilities and interpretive signage provided. The area is utilised by local schools for environmental studies.

Thousands of people enjoy walking, including dog walking, picnicking and bike riding through the gorge and other parts of the Park and Bushland.

The main visitor facility in the park is located adjacent to Narang Rd. This picnic area provides barbeque and other facilities and interpretation of the Park's values. The main walking track starts from this picnic area and is a one kilometre circuit along both sides of the gorge. Its features include metal stairs and walk ways, new lookout fencing, seating and signage. The route has been adjusted to avoid impacts for the Bomaderry Zieria. Provision has also been made for disabled access to prominent views.

The Aboriginal community together with the NPWS has developed a moving cultural heritage display in this area telling the story of Bomaderry Creek from creation times to the present.

The Bomaderry Creek Bushcare/Landcare group has been instrumental in caring for the Bushland over many years. The tourism potential of the Park and Bushland is largely unpublicised, despite easy access to the interpretive area from the Princes highway via Narang Rd. Promotion of the Park's presence and values would contribute significantly to the local economy.

6. Biodiversity-Environmental Assessment. (EA) including proposed mitigation measures and feasibility, effectiveness and reliability of proposed measures.

The Director General's Requirements (DGRs) include an assessment of the potential conflict of the proposed road routes with the Park and an assessment of the impacts of them on the conservation values and integrity of the Park/Bushland.

In the opinion of the Advisory Committee the EA does not meet the Director General's requirements.

The following comments address the conflicts with maintenance of Park and Bushland integrity, followed by comments on the Environmental Assessment Report of the impacts on Biodiversity.

Potential Conflict with integrity of Bomaderry Creek Regional Park and Bushland

The Advisory Committee has grave concerns regarding the impacts of the Central and Southern routes on the Park and bushland. The construction of a two-lane road through the Park together with verges, major bridges and approaches, is not consistent with the objectives for the Regional Park. The Central and Southern routes would constitute a major threat to the ecological and cultural integrity of the Park and the Bushland. They would not "maintain and enhance" significant landscape and habitat corridor values, conserve natural and cultural values, or promote public appreciation, sustainable visitor use etc consistent with the Regional Park management objectives.

The Northern route would have impacts on the northern boundary of the Park but would not pose the same level of threat to the integrity of the Park and its biodiversity, cultural and other values. The Advisory Committee considers that this route is the only route that could be approved because of its limited impacts on the values and integrity of the Park and Bushland.

Much of the native vegetation of the Park is in relatively undisturbed condition. However parts have been disturbed due to past uses and the proximity of surrounding developed areas. These incursions include former gravel extraction and storage areas, the powerlines/water main easement, trails and tracks and weed infestations. The result has been habitat loss and fragmentation. The NPWS is rehabilitating the former gravel storage and extraction areas.

Nevertheless the Park and Bushland retain high conservation, recreational and other values that are now threatened by the potential impacts of either of the Central or Southern routes.

The Central and Southern routes would cause further cumulative loss to the values and integrity of the Park. They would cut a swathe through the Park, fragmenting both it and the Bushland, to such an extent that their integrity as an intact area of diverse ecosystems would be threatened.

The EA seems to miss the point with regard to loss of park integrity, focussing on numbers of hectares to be cleared, loss of number of plants, yet failing to address the location of the proposed Central and Southern routes and their impacts on habitat fragmentation and degradation of the natural landscape.

Habitat clearing is a Key Threatening Process under the TSC Act. Habitat fragmentation is recognised as a barrier to genetic diversity resulting in eventual species extinction. In contrast habitat corridors provide landscape scale protection and are recognised as a means of maintaining species diversity and enabling adaptation to climate change.

The Park and Bushland are already partly isolated by urban development. A road that divides the Park and Bushland into smaller isolated compartments would isolate plants and animals, lowering numbers of individual species. Such reduction could result in local extinction for threatened species whose numbers in the area are already low, such as the Yellow-bellied Glider.

The Central route would cut the Park in two whereas the Southern route would cut the Bushland in two. The road routes are estimated to have a cleared width of 30 metres, plus possible further clearing on either side for safety and bushfire protection. For the central route, it seems that an additional service road may be maintained, presumably to provide for servicing the power line, possibly widening the road reserve to at least 50 M. (PP 78-79.) It is proposed also to have a lesser width of 20 m for a short distance adjacent to Bomaderry Zieria plants.

Extensive clearing through the central and southern part of the Park/Bushland to establish either of these routes would destroy native vegetation and cause loss of habitat for threatened flora and fauna species. Fauna species would be killed by traffic, as the proposed mitigation measures are unlikely to have much effect. (see section below.)

It is noted that the application claims that such losses would be minimal in the case of the Central route saying that a road along the Central route "is not expected to create a more significant barrier to flora and fauna than what currently exists." (pp 69-70) Such a claim is not credible given the nature of the existing narrow gravel track with infrequently slashed margins and its limited impacts on the surrounding environment when compared to a **30-metre** wide two-lane 80 km road and road reserve.

The existing track does not present a physical barrier to movement of fauna. Compare this with the habitat fragmentation and loss of species due to the edge effects of a road and proposed fences around areas of threatened plants and the direct impacts in terms of road kill of native fauna that would result.

Construction of the Central or Southern routes would cause removal and degradation of vegetation, as well as increased dumping, littering and changes to drainage and soils, due to changed runoff and increased erosion during the construction phase and after. Increased access for illegal bike and other vehicles would also increase illegal tracks and also contribute to erosion. (see section below.)

The EA claims that traffic on the road passing through the Park would prevent impacts due to vandalism as a consequence of increased surveillance, as well as strategically placed road barriers. This claim does not equate with the general experience of the impact of roads on National Parks. Rather they tend to increase illegal access and therefore increase the incidence of vandalism.

A road of the scale envisaged for both the Central and Southern routes would also change access to sunlight, increased lighting at night potentially changing the microclimate, and drainage changes, all impacts likely to change the ecosystems and biodiversity of the Park and Bushland.

These impacts would be most significant for the Central route.

Such impacts would be much less for the Northern option because this route would be on the edge of the Park/Bushland and through cleared private land. The Park would not be fragmented by this option, apart from the small area proposed to be set back from West Cambewarra Rd.

Impacts on Recreational and Visitor use and Park interpretation.

With regard to the impacts on recreation and other uses of the Park and Bushland, the EA acknowledges that the Central route “will create a barrier between recreational walking tracks to the south and north,” including east of Bomaderry Creek. This route would also significantly impact on Park access and facilities and the track to the weir, the track to Bernies Lookout and the track, which connects walking tracks along Bomaderry Creek with West Cambewarra Rd.

The EA states that Council would modify or relocate these tracks to accommodate the road and bridge option. It then goes on to claim that the “Location of the North Nowra Link Rd on the Central option would provide for improved awareness of the Regional Park and its facilities.”

Such claims are not credible. Firstly modification or relocation of existing tracks would cause further disturbance and fragmentation to this area of the Park, putting threatened species under additional threat. Secondly the Park entrance and NPWS visitor facilities, with its Aboriginal Heritage interpretation at the Narang Rd entrance, would have to be relocated, and accessed from underneath the bridge approaches, destroying the quiet ambiance of the picnic area and the Reconciliation Wall. Such impacts would be disrespect the contribution of the Aboriginal community and the significance of the Park for community members. (These and other impacts on Aboriginal Cultural Heritage are discussed below.)

These impacts would be severe. They would destroy rather than enhance appreciation of Park and Bushland values. Who wants to go for a quiet bush walk and be disturbed by constant traffic noise? This eastern part of the Central route would pass through/over the main access into the Park and the centre for Park day use. Visitors would have to access the existing weir from underneath the bridge approaches. The walk to Bernie’s Lookout and disabled access would be disrupted and any alternate route in this area would be steep and slippery, and therefore unsuitable and would also be likely to impact the *Eucalyptus langleyi* in the area.

No mention is made of the loss of the walking track along the route of the power line!

This unique Bomaderry Creek experience and local history would be lost for local people and visitors alike.

It is disturbing that the EA does not consider the impacts of the large-scale bridges on the landscape values of the Park and thus on Park and Bushland integrity.

The bridges for the Central and Southern routes would cross the Gorge at a considerable height.

They would cause the loss of the most significant landscape features of the Park and Bushland, the inspiring natural vistas and tranquil walks of the Gorge and Creek. These features would be interrupted visually by the bridges and by noise from passing traffic. The quiet wilderness experience would be dominated by the noise and smell of vehicles.

The Central route would thoroughly devalue Park integrity. The Southern route would devalue Bushland integrity.

The proposal to offset these impacts through Council contributing part of the bushland for inclusion in the Park is disingenuous, as the loss to amenity, Park and Bushland biodiversity and fragmentation could not be compensated as it represents an overall loss, taking both Park and Bushland into account. (see later comments.)

Impacts on soils and water quality.

The soils of the area consist of shallow sands and fine silty loams over sand stone and siltstone. It is understood that whilst the topsoils do not erode easily, the subsoils are prone to erosion and become unstable when the topsoil is removed.

The Park and bushland have suffered considerable erosion due to motor bike and other tracks through the area and areas cleared of vegetation and soil, such as the gravel extraction area.

Council measures the water quality in Bomaderry Creek and it is understood to be generally medium to good, although increased levels of nutrients and faecal coliform have been measured in the Creek prior to its entry into the Park.

The EA identifies a range of potential impacts during the construction period and once a road is in operation. The risks of increased soil disturbance, erosion and pollution are substantial.

For the construction period these impacts include over-clearing through poor delineation of the site and overall disturbance, degradation and compaction of the soil due to stockpiling, erosion through loss of vegetation and breaking up of the sandstone for construction, contamination of Bomaderry Creek by petrol spillage and concrete waste, introduction of weeds, exposure of leachate from former land fill on the Southern route.

The EA acknowledges that the level of disturbance would be greatest for the Southern route as it is the longest and least accessible. This route would also involve impacts within the riparian corridor, due to the width of the Gorge at this location and the need to construct footings and piers for the bridge.

The EA identifies the following impacts for all routes once a road is in operation; increased runoff from increased hard surfaces, build up of pollutants from vehicles, carried downstream during rainfall events, contamination of the perched water tables in the sandstone, petrol and other pollutant spills.

All these activities and impacts represent high level risks and potential irreversible impacts to Park and Bushland biodiversity and integrity and to water quality and to the riparian areas of Bomaderry Creek and its gorge.

The EA does not inspire confidence in its proposals for prevention and minimisation of these risks. Reference is made to "appropriate stormwater and bridge design and the implementation of appropriate mitigation measures." It goes on to suggest that all bridge discharge will be treated, by directing all drainage to gross pollutant traps installed at the base of the piers. During detailed design the need for further treatment will be investigated and if necessary sand filtration will be considered."

There seems to be limited mention of any plans to address soil erosion along the routes.

Such statements do not inspire confidence that the prevention and mitigation measures have been thought through and that they would in fact prevent and minimise these potentially high impacts.

Water pollution control technology is simply not capable of replicating natural runoff quality from native vegetation. There is no way of preventing pollution of Bomaderry Creek and the Park and Bushland environment from the construction and operation of a major road. All that gross pollution control traps would do is collect trash and solids that would have to be periodically cleaned out and taken away. Who would have responsibility to do this?

No mention is made of the construction of water pollution control ponds, which could reduce but not remove sediment and nutrient pollution. However even these measures could not handle pollution from chemicals and petrol. There is no provision in any case for land to be set aside for the construction of water pollution control ponds and if there was, it would entail further loss of native vegetation.

The EA does not make specific comments of soil erosion and water quality issues associated with the Central route or Northern route.

Nor does it address the very uncertain outcomes of disturbing the disused North Nowra tip along the Northern route. Presumably this would require DECCW consent via a pollution licence given the implications of impacts on water quality from disturbance and potential release of contaminants to the downslope vegetation and water ways of the Bushland.

It seems obvious that the Central route would have substantial impacts, even though not as great as the Southern route.

In contrast, the level of erosion and water quality impacts to the Park and Bushland along the Northern route would be minimal by comparison with the Central and Southern routes because the scale of the bridge would be less and the site is more accessible for plant and equipment. There would still be impacts on water quality nevertheless.

The scale of impacts both during construction and ongoing from a road following either the Southern or Central route is not ecologically sustainable. However, the impacts of the Northern route would be considerably less and capable of being reduced, if not prevented.

It seems clear that these significant impacts have not been taken into account in determining the suitability of the Central and Southern routes.

No decision-maker could be assured that the values and integrity of the Park and Bushland would be maintained in accordance with the Park objectives, with construction of the Central or Southern routes.

Accordingly the Central and Southern routes should be rejected.

Assessment of impacts on Biodiversity.

The DGRs specify that “the Assessment must clearly identify and consider any direct and indirect impacts on critical habitats, threatened species, populations or ecological communities listed under both State and Commonwealth legislation along the nominate routes and surrounding area”. It also states that the Assessment “must also consider the potential impacts of the route options on the conservation values and integrity of the Bomaderry Creek Regional Park, particularly as a result of fragmentation impacts and edge effects.”

Impacts on Biodiversity and Threatened Species are discussed in Section 13 of the North Nowra Link Rd EA.

This critique will focus on several key points of difference regarding claims made

Methodology.

The proponent has claimed that, “no impacts are expected or likely to occur on listed threatened species as a result of the North Nowra link Rd.” P 69. There is a range of reasons why this claim cannot be accepted. These are discussed in this section.

Careful consideration of the EA indicates that it is not consistent with the “Threatened Species assessment guidelines, The Assessment of Significance,” Department of Environment and Climate Change, 2007. Accordingly it seems that the Assessment does not comply with the DGRs and cannot form the basis for approval of the Central or Southern routes, the routes impacting most on Threatened species. Therefore it does not appear to be consistent with the DGRs.

These concerns arise from several issues, including incomplete and absent Threatened Species surveys, incorrect statements and failure to address cumulative local impacts rather than regional impacts.

Survey work for several Threatened Species and specific for these proposals were not completed or reported in the EA at the time of the release of the EIA for public comment. These include:

Giant Burrowing Frog, Spotted-tailed Quoll, Grey-headed Flying Fox, and Eastern Pigmy Possum.

The EA acknowledges that no targeted surveys were conducted for the Broad-headed Snake and Brittle Midge Orchid.

In the case of the Broad-headed snake, targeted surveys were not undertaken because of an assumption that no suitable habitat was present in the area. This is not the case. Habitat is considered to be located in the Park and the Bushland.

In the case of the Brittle Midge Orchid, it seems that data from other surveys has been incorrectly applied in the maps provided and no surveys specific for this study were carried out.

Yet surveys conducted by Alan Stephenson, the Conservation Officer for the Australian Orchid Society show that specimens of the Brittle Midge Orchid are present on the route of the power line easement that is the proposed Central route. Therefore this route would directly impact on this threatened species.

Another serious omission from the EA is an assessment of the Eastern Pygmy Possum, which is understood to have been identified recently in the Bushland.

There are questions also about the approach taken to Threatened Species Impact Assessment. The "Threatened Species assessment guidelines, The Assessment of Significance." Department of Environment and Climate Change, 2007 states that, "The objective of s.5A of the E P & A Act, the assessment of significance, is to improve the standard of consideration afforded to threatened species, populations and ecological communities, and their habitats through the planning and assessment process, and to ensure that the consideration is transparent."

The Guidelines advise that the 2002 amendments to the Act revised the factors to be taken into consideration, to maintain the intent of the legislation whilst focusing particularly on impacts at the local, rather than the regional environment. This shift in emphasis to local impacts was because the longterm loss of biodiversity at all levels arises mainly from the accumulation of losses and depletions of populations at a local level.

An "Assessment of Significance" is understood to be the first step in this process, followed if necessary by a "Species Impact Statement."

However the emphasis in this EA is on regional rather than local impacts resulting in a failure to properly assess the significance of the impacts on the local populations of these Threatened species.

Biodiversity and particular Threatened species.

The urban development that surrounds the park and Bushland has already had damaging impacts on biodiversity and particular Threatened species. It is considered that the Central and Southern routes would contribute further to these cumulative impacts on habitat and species.

Vegetation loss.

13.1 of the EA, describes the area of vegetation to be cleared for construction of roads for each of the proposed routes. However the estimates for each appear to relate to the areas cleared for the roads and not the additional vegetation clearance that would be needed for the construction of the proposed bridges and the elevated approaches and for the Central option, the relocation of the water pipeline and powerline across the gorge due to the road and bridge route. Accordingly the loss of native vegetation involved seems to represent a considerable under-estimate.

Gaining access to the difficult Central and Southern proposed bridge sites for very large plant and equipment items would have serious implications for native vegetation and the need to establish secure footings for the bridge supports would almost certainly result in clearing of the vegetation within the gorge for a considerable distance around these footings.

Threatened species assessment and mitigation.

Bomaderry Zieria (*Zieria baeuerlenii*)

Bomaderry Creek Park and Bushland are the only places where this species is found. It is distinctive because it does not reproduce by pollination or seed dispersal. The Assessment appears to focus on individual plants rather than the entire habitat of the Bomaderry Zieria, located both in the Park and Bushland where its habitat is already under threat from weeds and garden escapees.

The EA recognizes the presence of the Bomaderry Zieria adjacent to the proposed development footprint for the Central route. It claims that no individual Bomaderry Zieria would be lost or directly impacted as a result of construction activities.

However there appears to be a miscalculation of the distance of the proposed route from the plants designated as Group A, with the result that these specimens would be impacted. The EA proposes that the road width be reduced to 20 metres to avoid these plants. However it seems that the distance from the road edge would be 5m not the 10 m estimated. Whichever distance is correct, the risk of destruction during the construction phase seems too high.

Mitigation by way of fencing is proposed as a means of protecting these and other groups of the Bomaderry Zieria. However construction of a fence is also likely to impact on the plants and no assurances can be given that fences would be maintained in the future.

Therefore the claim of “no direct impacts” for the Bomaderry Zieria must be questioned, as plants are likely to be destroyed during construction.

With regard to indirect impacts, the assessment states that, “While the presence of the proposed road may present a physical barrier to a species which reproduces vegetatively, there is currently a permanently maintained service road along the line of the proposed central option, so any barrier a road represents is already permanently in place.” (P123).

There is no comparison between the barrier to species reproduction represented by a sealed road designed for 60-80 km/hr traffic and its cleared verges and the present access track, which could be partly rehabilitated to provide extended habitat for the Bomaderry Zieria.

The EA also refers to measures to mitigate potential impacts from changed drainage and stormwater runoff. However construction of such measures would require the removal of further vegetation, potentially harming Bomaderry Zieria habitat, without any capacity for ensuring that drainage from a road with its chemical pollutants could ever be restored to the same quality as natural runoff.

Reference is also made to impacts of Bushfire. Whatever the response of the Bomaderry Zieria to fire, it is likely that the construction of a road through its habitat would significantly increase the risk of destructive fires. The incidence and severity of fire is likely to increase, by comparison with the natural fire regime and by comparison with recorded arson events. Car access is likely to increase bushfire risks due to arson and car accidents as well as abandoned cigarette butts. Conversely if the Bomaderry Zieria needs a particular fire regime to keep the population viable, the presence of a road could decrease the ability of the NPWS to conduct ecological management burns.

The activities proposed to mitigate any indirect effects are unlikely to benefit the Bomaderry Zieria and despite Council commitments are unlikely to be implemented. Issues with fencing and drainage and pollution have already been mentioned. Retention of large trees for shade along the route would conflict with traffic safety and it is unlikely that verge management during the construction phase and future management would pay any great heed to any Zieria in the vicinity.

Council has made no commitment to contribute to funding of ongoing management activities, just a

commitment to “consider.” This does not mean that Council would agree to make a contribution.

Albatross Mallee. (*Eucalyptus langleyi*)

The EA claims that:

“An initial avoidance strategy for this species was used for the design of the proposed road, resulting in the avoidance of the majority of individuals within the vicinity of the route option footprints.

No individuals will be impacted either directly or indirectly by the Northern or Southern route options.

The presence of two individual *Eucalyptus langleyi* within the proposed development footprint for the Central option, within the endangered population, indicates that there will be indirect impacts to this species. The potential loss of two individuals due to the construction of the Central Option is not considered likely to result in adverse impacts on this species, because of the thousands of specimens of this species in the region.” (P 124.)

There are two issues that call this conclusion into question.

Firstly it is considered that the Central route would result in the loss of more plants because of the area required for the construction of the bridge and for the dismantling and relocation of the existing waterpipe line and power line across the Gorge.

The pipeline across the gorge is a major pipeline supplying water to Bomaderry and other villages and towns in the region. Construction of the central route would require Shoalhaven City Council to relocate both the pipe line and power line.

The two plants within the proposed development footprint for the central option (Site S5, Barratt 2009a) constitute 10% of this Endangered Population and would almost certainly be directly impacted by the construction of the bridge. The one plant at site S4 is likely to be impacted by the relocation of the water pipe. Destruction of a total of three plants means the loss of 15% of the Endangered Population.

Therefore it is considered that the Central route impacts on *Eucalyptus langleyi* have been underestimated.

The second issue is the failure to assess the local impact on this Endangered Population, where the loss of even a small number of plants is significant. The EA relies on perceived regional impacts, whereas the Assessment Guidelines require the assessment to take into account the local impacts.

However, this population of *E. langleyi* is the most northerly population of the species and is the only population north of the Shoalhaven River. It is also found at a lower altitude than other populations.

The plants occur as a series of isolated stands in both the Bushland and Park, are clustered around the Narang Rd Picnic Area and adjacent disturbed sites and have suffered a dramatic decline in numbers over the past ten years (Barratt 2009a).

For these reasons, this particular population of *E. langleyi* has been elevated to an Endangered status in the Threatened Species Conservation Act.

The proposed mitigation strategy of adding the land where the two plants likely to be destroyed to the Park is a strange suggestion and not considered to be an effective means of counteracting the impacts from the bridge construction and relocation of the water pipeline and the power line on the habitat of this species.

An assessment of the impacts on this local Endangered Population should therefore be conducted.

Brittle Midge Orchid (*Genoplesium baueri*.)

The EA found that clusters of plants are in the vicinity of the Central route option (with one plant likely to be impacted), and that others are in the vicinity of the Southern Option. The EA also found that clearing for construction of either of these route options might impact indirectly on both these clusters.

The failure to carry out surveys for this species seems to be in breach of the DGRs. Surveys would need to be carried out in February and March following a wet January to have any reliability regarding the location of this species. Instead the EA appears to have incorrectly interpreted the surveys conducted by Mr Alan Stephenson, the Conservation Officer of the Australian Orchid Society. (personal communication).

These surveys in 2010 found three plants within the Park on the northern side of the power line easement. These plants would be on the proposed Central route and would therefore suffer direct impact and would be destroyed should this route be approved and constructed.

The second concern is that again the EA relies on claims that impacts are unlikely because of the occurrence of this species elsewhere in the Shoalhaven Region, rather than concentrating on the impact on the habitat of this local population.

The EA conclusions are considered to be invalid for this species. Instead it is considered that the precautionary principle should apply, with a conclusion that both the Central and Southern routes would have direct impacts on this species in the local area.

It is noted also that no specific mitigation measures are proposed for the Brittle Midge Orchid.

Giant Burrowing Frog. (*Heleioporus australiacus*)

The Assessment states that, "There are no confirmed records of the Giant Burrowing Frog being present in the study area. However suitable sub-optimal breeding habitat (known as sandstone sedge) occurs within the Bomaderry Creek Regional Park and lies adjacent to the northern edge of the central option, including the construction of the bridge, would remove a small amount of this sub-optimal breeding habitat, approximately 0.22 hectares." (P 127)

This assertion of "...no confirmed records..." contrasts with the acceptance of past records of calls by the Land and Environment Court in 1993 and by the Department of Environment Climate Change and Water.

Although surveys for this species were conducted in early 2010, commitments have been made to carry out further surveys during 2010/11. The results of these surveys should be considered before coming to any conclusions about significance of impact on this species.

Mitigation measures are proposed. However, there is no guarantee that these measures would be implemented as Shoalhaven City Council appears to have a conflict of interest as both the proponent and the compliance agency.

The EA cannot conclude that, "it is highly unlikely that the proposal will impact on the ability of this species (if present) to move between areas of suitable habitat or to continue using the small patches remaining of sub-optimal habitat" (P 128.) as surveys have not been concluded and these frogs are known to traverse and rest on roads, thus becoming likely road kill if this route proceeds.

Grey-headed Flying Fox. (*Pteropus poliocephalus*)

The Assessment states that there is suitable habitat for the Grey-headed Flying Fox in the study area. However no survey was carried out despite extensive public knowledge of this colony.

The location of this colony is stated as being approximately 1 km from the construction footprint of the Southern route corridor. The EIA calls it a potential colony despite it being well established. The EIA also concludes that there is potential for indirect impacts during the construction phase but "it is not expected to impact on the Grey-headed Flying Fox or on important habitat areas for this species."

The applicant is not in a position to make such claims with any certainty. The only mitigation measure proposed is the proposed land swap discussed below.

Research by Ph D student, Ms Billie J Roberts, has been submitted to the Australian Department of the Environment etc. in December 2009. (Roberts 2009). This research confirms that Bomaderry Creek has been used as a campsite for the past 6 years (now seven) during spring, summer and autumn. Numbers have averaged 2,500 with numbers as high as 20,000. It is recognized as a maternal colony.

It is likely given the size of the colony that the Grey-headed Flying Foxes range widely within the Bushland and Park where there is suitable habitat. Study of the Flying Fox flight paths in 2009 by Barratt (2009 b) showed that they flew well beyond the immediate campsite area to feed on the Red Bloodwood, which is a significant component of the Grey Gum-stringybark Forest/Woodland. This vegetation community is extensive throughout the Bushland and Park and would be the vegetation community most affected by the Southern Route.

The Flying foxes are also known to disperse north along Bomaderry Creek so that any bridges built in the animal's flight path would present a hazard to the safety of both animals and humans.

Ms Roberts has also expressed concern regarding the impacts of the proposed road construction. These concerns include disturbance due to the noise and vibration of heavy machinery during construction, causing animals to fly during the day and to shift their campsite or abandon it altogether.

Ms Roberts concluded her advice to the Australia Department of the Environment by saying. "I am of the opinion that both route option 1 (Central) or option 2 (Southern) proposed by Shoalhaven City Council has the potential to impact habitat critical to the survival of the grey-headed flying foxes and that council has inadequately considered the impact in their proposal."

The EIA appears to have under-estimated the impacts of the Central route on the Grey Headed Flying Fox and its conclusion that it is not likely to impact on this species or its habitat is unsound.

Yellow-bellied Glider. (*Petaurus australis*)

The numbers of Yellow-Bellied Gliders in the Park/Bushland are known to be low and with colonies isolated so the loss of even a few habitat trees is significant.

The claim is made that the vegetation type, Grey Gum-Stringybark Forest/Woodland around the gorge is the core habitat for the Yellow-bellied Glider. However it is apparent from previous observations that Scribbly Gum provides food resources and tall Spotted Gums facilitate gliding. Spotted Gums also provide den sites.

These species should also have been taken into account as habitat for the Yellow-bellied Glider. These communities are present in the vicinity of the Central route, so it is clear that the Central route would have impacts on Yellow-bellied Glider habitat.

Furthermore the claim that the small number of feed trees that would be lost due to the Southern route, is therefore not a concern is inconsistent with the low numbers of Yellow-bellied Gliders in the area. Every effort should be made to conserve their habitat to ensure they survive in the Park and Bushland.

Glossy Black Cockatoo.- (*Calyptorhynchus lathami*)

The EA considers that the main concentration of hollow bearing and feed trees for Glossy Black Cockatoos is situated along the Northern and Central Routes, with only small areas of habitat needing to be cleared for construction. The EIA considers the extent of the loss as minimal for these routes and therefore not significant. However records from 1995 show the presence of Allocasuarina providing feeding habitat and nesting hollows suitable for Glossy Black Cockatoos in the vicinity of the Central route as well as the Northern route.

The proposed location of the Northern route would pass south of the Allocasuarina, with possible impacts depending on whether the Allocasuarina trees are retained to provide a buffer between the houses along West Cambewarra Rd and the proposed Northern route for the Link Rd.

Compensatory Offsets.

The Assessment outlines a proposed offer from Shoalhaven City Council of an offset of up to 50 hectares of Council land within the Bushland for dedication and inclusion in the Bomaderry Creek Regional Park. (EA page 2 and Appendix F) The claim is also made that in addition to the proposed mitigation measures, such a transfer of land “will increase potential habitat for fauna species within the Regional Park.”

This proposal cannot be regarded a genuine effort to offer a site in exchange for the likely damage done to vegetation communities and species, including threatened flora and fauna species habitat whether in the Park or not.

This offer is not considered to be compensation. From an ecological perspective the Bushland and Park are integral parts of the same complex landscape. There are no natural barriers between them, only the administrative boundaries due to administration of the Park by DECCW and the remaining parts of the bushland by Shoalhaven City Council.

The loss of overall landscape and biodiversity values due to a road and bridge following the Central or Southern Route cannot be compensated by an exchange of ownership for part of the Bushland. This offer would still constitute an overall loss.

Furthermore, much of the land Council is offering is Threatened species habitat, which Council should already be managing for its conservation values. The EA at P 184 highlights the high biodiversity and connectivity values of the Bushland areas proposed as part of the offset.

Accordingly, this land is most unlikely to be rezoned for development. Also it is steep gorge terrain with limited access.

It should be noted that the offer does not include all of Council's land in the Bushland. Several areas are recognized for their high conservation values, including the Glossy Black Cockatoo habitat adjacent to West Cambewarra Rd. that Council has identified for future urban development and a number of *Zieria baeuerlenii* and *Eucalyptus langleyi* plants and their habitats that are identified for extension of tennis courts.

The offset proposal would also present significant management problems for the National Parks and Wildlife Division of DECCW, because these areas are degraded and despite the best efforts of the Bomaderry Creek Landcare Group, would require substantial funding and human resources to regenerate the area of the Bushland now apparently on offer.

Impacts on Aboriginal Cultural Heritage.

The EA provides an assessment of the potential impacts of the Link Road proposals on Aboriginal Archaeological Heritage, but not an assessment on Aboriginal landscape values and contemporary values.

It seems also that the archaeological assessment has been prepared for a previous proposal. The Northern West Cambewarra route is shown to be along the existing road, and through to the unconstructed road reserve to Moss Vale Rd, when the proposed route is now 50 m to the south and following a different route.

As a consequence sites identified in the Assessment as BCRP 14 and BCRP 028 are unlikely to be impacted by the proposed Northern Route. However site BCRP 015 is likely to be impacted.

Three sites appear to be at risk from the Central route.

Although these sites have been assessed as of low significance it seems that no conclusions should be drawn until appropriate Aboriginal people have been consulted. Reference is made to one Aboriginal person being consulted in 2009. This is clearly an inadequate level of Aboriginal consultation for such a significant proposal. This minimal level of consultation is not acceptable, especially when Aboriginal people can demonstrate continuous use of this area and there are organizations and individuals in Nowra and surrounds who are appropriately authorised to provide advice.

The Reconciliation Wall at the eastern entrance to the Park is a graphic and moving account of the unbroken links with the past and Aboriginal people's pride in their country. Yet access to this site would be from underneath the Central route bridge and eastern approaches, with sounds of traffic disturbing the peace. This feature is not mentioned in the EA a sad reflection of Council's interest and support for Aboriginal heritage.

The disrespectful manner in which Aboriginal consultation and heritage issues have been addressed is not consistent with the DGRs as also is the Archaeological survey.

Comparison of environmental impacts of the three proposed routes.

At Page 132-133, of the EA a comparison of options is discussed. As pointed out previously, the assessment of significance consistent with the Threatened Species Impact Assessment Guidelines, should be made on the basis of the local impacts on the species and their habitats. However in most cases the EA while acknowledging that there would be an impact, dismisses the impact as not significant on the basis of the species being present in other parts of the Region. Furthermore the assessments are questionable due to inaccurate and absent surveys and should not be accepted as basis for assessing the impacts of these proposals.

Accordingly, the EA assessments of significant impacts are therefore under-estimates for both the Central and Southern options.

Central route.

For the Central route, the EA claims potential impacts for only two *Eucalyptus langleyi* plants. This is a gross under-estimate, when the impact of bridge approaches and the dismantling and relocation of the water pipe and power line are taken into account.

The EA also claims only one Bauer's Midge orchid would be indirectly impacted, whereas Mr Stephenson's surveys demonstrate that at least 3 plants would be directly impacted and other habitat indirectly impacted.

Nine *Hibbertia* sp Nov "Menai," were found to be directly impacted, with another two specimens in the vicinity.

With regard to the Bomaderry Zieria, the claim is made that "it is not considered that the Central option would result in a significant new barrier to reproduction for *Zieria baeuerlenii* because there is currently a permanently maintained service road along the line of the proposed Central option which is already a permanent barrier to vegetation reproduction." As indicated previously, his claim is not considered valid, as a 30 m or 20 m road would represent a permanent barrier, whereas the existing track could be rehabilitated.

It is considered that there would be a significant impact on specimens and habitat for the Bomaderry Zieria.

The assessment of impacts for the Central route for the following species and their habitat has been made incorrectly on the basis of perceived regional rather than local impacts. For the Central option the species are: *Eucalyptus langleyi*, *Genoplesium baueri*, *Hibbertia* sp Nov "Menai," Glossy Black Cockatoo, Gang Gang Cockatoo, Square-tailed Kite, Masked Owl, Powerful Owl, Large-footed Myotis, Yellow-bellied Glider, and Spotted-tail Quoll.

Furthermore, impacts of this route on the Grey-headed Flying Fox have not been considered, despite the part of the Gorge affected by this route, having been identified as habitat for this species and any bridge presenting a hazard to them. And, impacts on the Eastern Pigmy Possum have not been assessed, as its presence in the Bushland was not recorded in the EA.

Therefore, it is considered that there would be significant local impacts on individual species and biodiversity from construction and operation of the Central route. The precautionary principle should be invoked as the basis for refusing this option.

Southern Route

For the Southern Route, the EA concludes that 23 *Hibbertia* sp Nov “Menai specimens would be impacted, but that “given the species abundance in the region, adverse impacts affecting the vulnerability of the species are not considered likely.”

The EA also states that potential impacts for 9 individual Bauer’s Midge Orchid may occur. However, this assessment was not based on a survey undertaken for this proposal.

The Assessment also identifies indirect impacts for the Grey-headed Flying Fox. However this assessment is also disputed because of the failure to acknowledge the documented size and significance of the colony as a maternal colony, instead describing it as “a potential Flying Fox camp.”

Impact assessments concluding that there would be no impacts on these species and their habitat have been made incorrectly, on the basis of perceived regional rather than local impacts: *Genoplesium baueri*, *Hibbertia* sp Nov “Menai, Gang Gang Cockatoo, Square-tailed Kite, Masked Owl, Powerful Owl, Large-footed Myotis.

Accordingly it is considered that the local impacts are likely to be more significant than indicated and as a result the precautionary principle should be invoked and the Southern Route ruled out.

Northern Route.

The Northern route was found to contain potential habitat for the Glossy Black Cockatoo.

A road following this proposed route would follow the northern edge of the Bushland in the Park, parallel to West Cambewarra Rd. The proposal involves setting back the road at least 50 m. This move would appear to avoid significant impacts on known habitat for Glossy Black Cockatoo in the north west of the Park as the Allocasuarina feed trees could be retained between the two roads. Nevertheless if mounds to protect houses on West Cambewarra Rd were to be built there, then this route would damage this habitat. However retention of the trees should be adequate in providing an effective noise buffer.

This route would not require assessment under the Commonwealth Act, because it would not impact on Commonwealth Threatened Species.

Summary of route impacts.

Table 13.1 provides a “Summary of Key Biodiversity indicators for Comparison.” This table is considered to substantially under-estimate the biodiversity impacts of the Central and Southern routes.

Furthermore, this table and its calculations do not appear to take into account the loss of integrity for the Park and Bushland from the Central and Southern Routes.

The assessment calculates the area of vegetation to be lost, but not the quality of the habitat and impact of clearing on fragmentation. There is likely to be an under-estimate of the area to be cleared for the Central route as no allowance appears to have been made for dismantling and relocation of the water pipe and power lines.

The assessment in the table with regard to the impact on specific species is also disputed.

For *Eucalyptus langleyi*, the Central route would cause a direct significant impact not an indirect impact.

For the Bauer's Midge Orchid the Central Route would have a direct significant impact, with the Southern Route also having a direct impact, whereas the table classifies the impacts as nil for the Central Route.

For the Grey-headed Flying Fox, the Central Route as well as the Southern Route would have an impact.

For the Yellow-bellied Glider, the Central Route as well as the Southern Route would have an impact.

Therefore the impact of the Central Route on the biodiversity of the Park and Bushland has been substantially under-estimated.

The Advisory Committee also has concerns with the ultimate conclusions of this Summary Assessment. The Summary states that,

"In terms of impacts upon threatened species, the Northern option provides the best biodiversity outcomes. This is due to the fact that no threatened flora species are present and that the threatened species habitat within the construction corridor only represents a small part of the overall habitat availability within the broader region. Both the central and southern options will directly impact a number of flora species.

Although the Northern option provides the best biodiversity outcome when compared to the central and Southern options, environmental impacts associated with all three routes are considered to be low provided that the specified mitigation measures are implemented." Page 134.

The Advisory Committee agrees that the Northern option represents the best biodiversity outcome due to no threatened flora being impacted. With regard to impacts on the Glossy Black Cockatoo, this option is also substantiated, because the local impacts could be ameliorated due to modification of the route to protect the stand of *Allocasuarina* habitat for the Glossy Black Cockatoo.

However the Committee disagrees with the conclusion that the environmental impacts of the Central and Southern route would be low. The analysis provided in this submission refutes this claim. Furthermore, the EA reaches this conclusion with the proviso that specified mitigation measures would be implemented. It is not considered that Shoalhaven City Council can provide this level of certainty, as its capacity to ensure compliance with conditions attached to an approval is demonstrably limited. As indicated previously there is a perceived conflict of interest with Council being both the applicant and the compliance authority.

The Central and Southern Options should be rejected on the basis of the precautionary principle, that "where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental damage."

Accordingly, the Northern option is the only route that should be considered for approval.

7. Strategic planning issues

South Coast Regional Strategy.

The South Coast Regional Strategy 2007 is regarded as the pre-eminent planning document for the South Coast. It sets out clear land use plans whilst aiming to protect and enhance the values of the South Coast environment. The Strategy is a statutory document, which under Section 117 of the Environment Planning and Assessment Act requires that the Shoalhaven Local Environment Plan be consistent with the Strategy.

The Strategy recognises Nowra-Bomaderry as the major centre of the Shoalhaven, with its surrounds identified as the location of future development, designed to cater for population expansion in the Shoalhaven over the 25 years from 2007. Chapter 6. These areas are specified as those identified in the Nowra-Bomaderry Structure Plan.

The Chapter 4, the Natural Environment Section of the Strategy includes several outcomes, which should be taken into account in assessment of this application:

- “The quality and distribution of the Region’s biodiversity will be maintained or enhanced over time.”
- “Urban development, including further subdivision, will be directed away from areas known to be or likely to be important for conservation.”

The Strategy does not specifically address transport infrastructure. However it can be assumed that the term “urban development” incorporates provision of roads and other infrastructure.

The Central and Southern options are not consistent with the Strategy because they would not maintain or enhance the regionally significant biodiversity of the Bomaderry Creek Regional Park or direct development away from this area known to be important for conservation.

The Northern route would have potential biodiversity impacts. However these can be managed in an ecologically sustainable manner.

Nowra Bomaderry Structure Plan

The NSW Government approved the Nowra Bomaderry Structure Plan in 2008.

The Structure Plan deals with Council’s plans for the future development, infrastructure and transport in North Nowra- Bomaderry and surrounds, and including areas immediately adjacent to the Bomaderry Creek Regional Park and incorporating parts of the Bushland.

The Plan also deals with conservation of the natural and cultural environment referring to a set of principles for identifying core conservation areas, which includes the statement that “biodiversity hotspots should be considered core conservation areas.” The Bomaderry Creek Bushland/Regional Park with its exceptional biodiversity for such a small area, would meet this criterion.

Neither the South Coast Regional Strategy nor the Nowra-Bomaderry Structure Plan resolved the conflict regarding the future of the Bomaderry Creek Park/Bushland inherent in their objectives for development and infrastructure and their objectives for conservation of the natural and cultural environment.

Nevertheless it would be reasonable to assume that the environment protection objectives of these strategic planning documents, would be best met by choosing a route for the North Nowra Link Rd that would have the least environmental impacts. The Northern route is the only route that meets this criterion.

Therefore the Central and Southern routes are not consistent with the conservation objectives or with the package of traffic measures contained in the Structure Plan.

The Plan deals with existing and predicted transport issues, especially the issue of the Shoalhaven River Bridges and their impact on through and local traffic. Associated studies showed that approximately 50 % of daily trips are local traffic generated within the Nowra Bomaderry area. See Pages 46-47 of the Structure Plan.

Regarding the proposed Nowra-Bomaderry western bypass, the Plan states that this bypass would not alleviate all the known traffic problems and that it was not feasible at that time.

As a consequence the Plan identified several key road projects to increase capacity in the short to medium term pending further consideration of the proposed bypass. These include:

- a North Nowra to Bomaderry Link Rd.
- improvements to the Shoalhaven River Bridge intersections and the intersection at Bridge Rd and the Princes Highway.

With regard to the North Nowra Link Rd the Structure Plan states that it “will provide a much needed alternative route from North Nowra to the Princes Highway, thus taking the pressure off the Princes Highway /Illaroo Rd and Princes Highway/Bolong Rd intersections.”

However, the Structure Plan did not specify a particular route for the Link Road.

The Structure Plan goes on to say that traffic capacity, road safety and noise, pedestrian and access concerns along Illaroo Rd would all be alleviated by a Link Rd. “Preliminary analysis has determined that the link is required in the short term regardless of new development, however it is also considered to be an essential additional link to facilitate any new development of new living areas to the north of the Shoalhaven River.”

Shoalhaven City Council lodged the Part 3A application for the Link Rd but has not implemented improvements to intersections with the Princes Highway as part of the package of strategic traffic planning measures proposed in the Structure Plan.

Justification for undertaking the proposal, including impacts on residents, traffic congestion, existing and future land use conflicts and cost benefit.

Impacts on Private residences

Every effort should be made to ensure that the impacts on existing and future residents are limited. The only way this can occur is by accepting the Northern route as having the least impact on existing residents and ensuring that any future development is planned so that new housing in the vicinity of this route is not impacted by noise and other interference.

The Assessment shows that each of the three options would impact on current and future residences. See Table 11.2.

The Central route would pass within 30 m of existing residences and would more directly impact on future residences near Illaroo Rd should this area be developed.

The Southern route has been assessed as having the most impact on current residents and would require acquisition of residential and business properties. The route is estimated to come within 15 m of some properties.

The Northern route would pass within 50 m of existing residences on the existing West Cambewarra Rd. However these impacts would be buffered by the grove of trees between the two roads. This route would also traverse land zoned for future residential development

Traffic congestion.

Hopes are unfounded that either the Central or Southern link Rd route would represent a panacea for a whole range of issues, including the traffic bottleneck at the Shoalhaven River bridges and their access, traffic congestion on Illaroo Rd and traffic access for future urban development proposed for areas of North Nowra.

The proposed Link Rd cannot meet all these objectives. The major factor in causing traffic congestion is the Princes Highway Bridge crossing over the Shoalhaven River. Many in the community recognise this fact and the AECOM study supports this view.

The construction of the North Nowra Link Rd cannot be justified on the basis of its contribution to reducing congestion on the highway at the bridges. All a Link Rd achieves in relation to this issue is to provide access and egress to the Princes Highway via two routes rather than one. However traffic from all directions still has to traverse the highway across the Shoalhaven River Bridges.

There is justification for a Link Rd to contribute to relieving congestion on Illaroo Rd. To do this some existing traffic and traffic from future development would need to be attracted away from Illaroo Rd. via a shorter and faster route. The Northern route would benefit existing residences in the northern area and new residents from planned development expansion to the west, north west and north of the Bomaderry Creek Park/Bushland.

The Northern route is the only route that would relieve traffic congestion on Illaroo Rd because the distance for journeys from the existing northern areas of North Nowra and for future developed areas would be comparable or less than the Mc Mahons Rd-Illaroo Rd route.

The Mc Mahons Rd-Illaroo Rd route is shorter than either of the proposed Central or Southern routes. Accordingly these routes would not attract traffic away from Illaroo Rd.

The figures are as follows:

Pitt St/Mc Mahons Road Intersection to Bridge Rd/Highway intersection via Illaroo Rd is 3.72 km.

Travelling via the Central Link Rd route, this journey would be 5.56 km.

Both the Southern and Northern routes are longer than the Central route. Existing and future motorists are not likely to be attracted to the proposed Central and Southern Link Rd routes as these would be considerably longer and more time and petrol-consuming than the Illaroo Rd route.

Therefore the construction of either the Central or Southern routes cannot be justified in terms of relieving traffic congestion on Illaroo Rd.

Existing and future land use conflicts.

The Nowra Bomaderry Structure Plan identifies future development areas to the north, west and north west of Bomaderry Creek Park and Bushland. The Plan aims to provide transport infrastructure for future residents whilst at the same time ensuring that the values of the Bomaderry Creek Park and Bushland are maintained.

The Northern route is the only route consistent with both these strategic objectives. This route would address the traffic issues whilst having limited adverse impacts on the integrity and values of the Park and Bushland regional biodiversity.

This route would facilitate some but not all of the proposed development expansion and associated population increase. Development and therefore transport capacity to the north of North would still be constrained by the geography of the area, including the Shoalhaven River, its bridges and the presence of the Princes Highway as well as the Bomaderry Creek Regional Park and Bushland.

Strategic planning needs to allow for Habitat corridors to the west, to prevent isolation of Park and Bushland species and to prevent additional population pressures on biodiversity. Without habitat connectivity, further loss of biodiversity is likely to occur due to the inability of small isolated populations to cope with major disturbance events or adapt to human-induced global warming and climate change.

Cost-benefit considerations.

The proposal provides the following estimates of cost for each of the Link Rd options.

Central route \$ 13 M.
Southern route \$ 18.5 M
Northern route \$ 14.3 M

- The Central route bridge is proposed to be a three-span 75 m long bridge with 75 m elevated approaches to the west and 50 m elevated approaches to the east.
- The Southern route bridge is proposed to be a three span box girder 110 m wide bridge, spanning the Gorge at its deepest part, 30 m. The length of the bridge approaches has not been provided in the EIA.
- The Northern route bridge located in the shallow upper valley of Bomaderry Creek is estimated to be 75 m in length and located above flood level. No details of the length of bridge approaches were provided in the EIA.

Common sense would suggest that the Central and Southern options involving major bridges and approaches over the Gorge would be the most expensive. Yet the Central route is estimated to be the least expensive. It seems that independent costing is needed to verify these cost estimates. Without such verification they cannot be accepted as the basis for approval of the Central route.

The Northern route road and bridge do not seem to require the same heavy engineering as the other routes, so the higher estimated costs for this route seem questionable.

The Northern route at 1,730 m is shorter than the Central route at 1,810 M so how is a shorter route with a less substantial bridge more expensive? The Southern route is the longest, estimated at 1,820 M. It may be that estimates for the Northern route involve purchase of private land, (a small section of the cattle yards) and the construction of a roundabout. These costs would be counterbalanced by the costs of acquiring existing residences and installing traffic lights at the highway intersection associate with the Southern route and significant access connections to a number of properties on the eastern side of the Creek on the Central route.

There are other issues with the costings, particularly for the Central route. Have costings been included for the proposed service road beside the link road route? Are the costs of dismantling and relocating the water pipeline and power line included in this option? Are costs of reimbursing the Department of Environment Climate Change and Water for new access routes and parking, for reconstructing walking tracks and the park picnic and interpretive area included?

These costs should be taken into account in any cost comparisons and any decisions regarding the best option.

It is clear that there are significant doubts regarding the comparative costings for these routes. Furthermore there are questions of public accountability about the Central and Southern routes for a North Nowra Link Rd when they would not meet objectives for reducing traffic congestion, causing minimal impact to existing residents and catering for future population needs as well as and maintaining and enhancing the conservation values of Bomaderry Creek Regional Park and Bushland.

The Northern Route is the only route that represents an ecologically sustainable, strategically effective alternative and cost effective route by comparison with the environmentally damaging and strategically ineffective Central and Southern Routes.

National Parks and Wildlife South coast Region Advisory Committee. March 2011

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